

CLAIMS

That which is claimed is:

- 5 1. An isolated toxin from *Karlodinium micrum*.
2. The isolated toxin according to claim 1 comprising a member selected from the group consisting of KmTx 1, KmTx 2, KmTx 3, KmTx 4, KmTx 5 and KmTx 6.
- 10 3. The isolated toxin according to claim 1 comprising KmTx 1, wherein the KmTx 1 toxin is eluted at about 22-24 minutes of reversed phase HPLC elution of *Karlodinium micrum*.
4. The isolated toxin according to claim 1 comprising KmTx 3, wherein the KmTx 3 toxin is eluted at about 16-18 minutes of reversed phase HPLC elution of *Karlodinium micrum*.
- 15 5. The isolated toxin according to claim 1 comprising KmTx 1, wherein the KmTx 1 toxin is eluted at about 22 to 24 minutes of reversed phase HPLC fractions of a concentrated 80% MeOH tC₁₈ elution of *Karlodinium micrum*.
- 20 6. The isolated toxin according to claim 1 comprising KmTx 3, wherein the KmTx 3 toxin is eluted at about 16-18 minutes of reversed phase HPLC fractions of a concentrated 80% MeOH tC₁₈ elution of *Karlodinium micrum*.
7. The isolated toxin according to claim 1 comprising a molecular mass of 1362 daltons.
- 25 8. The isolated toxin according to claim 1 comprising a molecular mass of 1344 daltons.
9. A method of producing a karlotoxin comprising the steps of: a) culturing *Karlodinium micrum* in a medium suitable for production of toxin; and b) isolating the toxin.
- 30 10. The method according to claim 7 comprising a member selected from the group consisting of KmTx 1, KmTx 2, KmTx 3, KmTx 4, KmTx 5 and KmTx 6.
11. The method according to claim 7, wherein the toxin is isolated by separation on a HPLC column.
- 35

12. An antibody which binds a *Karlodinium micrum* toxin.

13. The antibody of claim 12, wherein the *Karlodinium micrum* toxin comprises a member
5 selected from the group consisting of KmTx 1, KmTx 2, KmTx 3, KmTx 4, KmTx 5 and KmTx 6.

14. The antibody of claim 13, wherein the antibody is monoclonal.

15. The antibody of claim 13, wherein the antibody is polyclonal.

10 16. The antibody of claim 13, wherein the *Karlodinium micrum* toxin comprises KmTx 1 and is eluted at about 22-24 minutes of reversed phase HPLC elution of *Karlodinium micrum*.

17. The antibody of claim 13, wherein the *Karlodinium micrum* toxin comprises KmTx 3 and is
15 eluted at about 17 - 18 minutes of reversed phase HPLC elution of *Karlodinium micrum*.

18. The antibody of claim 13, wherein the *Karlodinium micrum* toxin comprises a molecular mass of 1362 daltons.

20 19. The antibody of claim 13, wherein the *Karlodinium micrum* toxin comprises a molecular mass of 1344 daltons.

20. A method of inhibiting a *Karlodinium micrum* toxin comprising contacting an antibody which specifically binds said toxin.

25 21. The method of claim 20, wherein the toxin is the toxin comprises a member selected from the group consisting of KmTx 1, KmTx 2, KmTx 3, KmTx 4, KmTx 5 and KmTx 6.

22. The method of claim 20, wherein the toxin is the toxin comprises KmTx 1 and is eluted at
30 about 22-24 minutes of reversed phase HPLC elution of *Karlodinium micrum*.

23. The method of claim 20, wherein the toxin is the toxin comprises KmTx 3 and is eluted at about 17 - 18 minutes of reversed phase HPLC elution of *Karlodinium micrum*.

35 24. An immunoconjugate comprising a *Karlodinium micrum* toxin linked to an antibody.

25. The immunoconjugate of claim 24, wherein the toxin comprises a member selected from the group consisting of KmTx 1, KmTx 2, KmTx 3, KmTx 4, KmTx 5 and KmTx 6.

26. The immunoconjugate of claim 25, wherein the antibody is an anti-tumor antibody.

27. A composition comprising the immunoconjugate of claim 25.

28. A composition comprising the immunoconjugate of claim 26.

29. A composition comprising a *Karlodinium micrum* toxin.

30. A composition according to claim 29, wherein the toxin comprises a member selected from the group consisting of KmTx 1, KmTx 2, KmTx 3, KmTx 4, KmTx 5 and KmTx 6.

31. A composition according to claim 29, wherein the toxin comprises KmTx 1 and is eluted at about 22-24 minutes of reversed phase HPLC elution of *Karlodinium micrum*.

32. A composition according to claim 29, wherein the toxin comprises KmTx 3 and is eluted at about 17-18 minutes of reversed phase HPLC elution of *Karlodinium micrum*.

34. A method of treating blooms in an aqueous medium caused by *K. micrum* to reduce mortality rate of fish exposed to the treatment, the method comprising:

introducing an algicidal composition in an effective amount to reduce the level of *K micrum* in the aqueous medium, wherein the algicidal composition comprises potassium permanganate and does not include copper sulfate.

35. A method of screening a candidate substance for ability to bind and/or modulate the activity of *K. micrum* toxin, the method comprising:

contacting the candidate substance with the *K. micrum* toxin to determine the ability of the candidate substance to interact with the *K. micrum* toxin.

36. The method according to claim 35, wherein the *K. micrum* toxin comprises a member selected from the group consisting of KmTx 1, KmTx 2, KmTx 3, KmTx 4, KmTx 5 and KmTx 6.